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From: Philip B. Stark [REDACTED]  
Sent: Friday, March 27, 2009 9:53 AM  
To: Bretschneider, Jennie  
Subject: Re: Redline version of proposed PEMT readoption.

1) This version allows jurisdictions to do something other than the PEMT percentages as long as they sample at least as much. That raises a couple of issues:

a) Would this be an opportunity to allow jurisdictions to do a "principled" (i.e., risk-limiting) PEMT in lieu of those percentages, as long as it has adequate statistical effectiveness to correct wrong outcomes? For instance, in 20122(e), you might write that they can do something else, as long as it has at least a 90% chance of leading to a full hand count if a hand count would show a different electoral outcome. That would let us expand the pilot of risk-limiting audits.

b) Also, using "principled" alternatives would allow jurisdictions to use other, more efficient sampling schemes, such as sampling with probability proportional to an error bound (the current language precludes that). We used such sampling in Santa Cruz and Marin in November; it cut the effort in half.

2) The provision 20123(c) that calls for escalating only within jurisdictions will fix fewer wrong outcomes. Here's an illustration.

Suppose that there are many errors in county A (but too few to erase the overall margin in the race), and few errors in county B. Suppose that together the errors in the two counties do erase the margin.

Then the county A PEMT is likely to escalate to a full count and the county B PEMT is not. The "corrected" outcome of the race will still be wrong, because only a full count of both counties would reveal that the entire margin was erased by error. (You could add some provision to re-calculate the margin if any county proceeds to a full manual count, with a requirement that the other counties count more if the margin gets sufficiently small; that could help.)

3) As you know, I think these regulations are a substantial weakening of the PEMT, both because of the relaxed escalation provision and the smaller initial sample size. The regs could be strengthened by a variety of things, such as requiring a 50% PEMT sample for races that are very small--e.g., 10 precincts or fewer. (In fact, the sample size in such cases should probably be 90% or 100% if you want to limit the risk of certifying a wrong outcome 10%, for example.)

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